

SAFETY COMMISSION AGENDA STATEMENT

Item 2
Meeting Date: 04/02/14

ITEM TITLE: Resolution of the Safety Commission of the City of Chula Vista recommending that the Chula Vista City Council increase the existing speed limit on Hilltop Drive between Palomar Street and Main Street from 30 mph to 35 mph, and that Schedule X of the register maintained in the Office of the City Engineer be amended to reflect the revised speed limit

SUBMITTED BY: Principal Civil Engineer *FXR*

SUMMARY:

Staff completed an Engineering and Traffic Survey for a segment of Hilltop Drive in accordance with the California Vehicle Code, which indicates that the posting of speed limits be determined by an Engineering and Traffic Survey for each street with a posted speed limit within the City. Based on the results of this speed survey, staff has determined that the speed limit on Hilltop Drive, between Palomar Street and Main Street should be increased from 30 mph to 35 mph.

RECOMMENDATION: That the Safety Commission concur with staff and recommend the Chula Vista City Council increase the existing speed limit on Hilltop Drive between Palomar Street and Main Street from 30 mph to 35 mph, and that Schedule X of the register maintained in the Office of the City Engineer be amended to reflect the revised speed limit.

DISCUSSION:

As part of the previous Engineering and Traffic Survey, the segment on Hilltop Drive between Palomar Street and E. Rienstra Street was surveyed within the overall segment between 'F' Street to E. Rienstra Street (see Attachment 1). However, due to changes in the roadway characteristics along Hilltop Drive, the initial Engineering and Traffic Survey segment should have ended at Palomar Street not at E. Rienstra Street. Hilltop Drive north of Palomar Street is two lanes, one in each direction. Hilltop Drive south of Palomar Street is four lanes, two in each direction and continues south to Main Street. When preparing an Engineering and Traffic Survey, the roadway characteristics need to be consistent within that segment. Therefore, Hilltop Drive segment of roadway between Palomar Street to E. Rienstra Street will be included in the overall survey from Palomar Street to Main Street. The existing speed on Hilltop Drive between E. Rienstra Street and Main Street is 35 mph.

Speed zones are established on the basis of an "Engineering and Traffic Survey" and adoption of City Council Ordinance. The survey includes an analysis of the current speed distribution of free-flowing vehicles without any impacts from roadside, nearby development and/or construction.

Engineering and Traffic Survey

City staff completed speed surveys on Hilltop Drive, between Palomar Street and Main Street in accordance with the California Vehicle Code which indicates that the posting of speed limits be determined by an Engineering and Traffic Survey (see Attachment 2). As described in the California Vehicle Code, the survey shall include:

- (1) Prevailing speeds as determined by traffic engineering measurements;
- (2) Accident records;
- (3) Traffic/roadside conditions not readily apparent to the driver.

These roadway characteristics are then used to help determine an appropriate speed limit. The Manual on Uniform Traffic Control Devices (MUTCD) states that the speed limit shall be established at the nearest 5 mph increment of the 85th percentile speed. Speed limits established on the basis of the 85th percentile speed conform to the consensus of those who drive the street as to what speed is reasonable and safe, and are not dependent on the judgment of one or a few individuals. Speed limits posted higher than the 85th percentile speed are not generally considered reasonable and safe while speed limits posted below the 85th percentile typically do not facilitate the orderly movement of traffic. When roadside development results in excessive traffic conflicts or unusual conditions exist that are not apparent to drivers, the 85th percentile speed limit may be further reduced by 5 mph. If the 5 mph reduction procedure is applied, the Engineering and Traffic Survey shall document in writing the conditions and justification for the lower speed limit and be approved by a registered Civil or Traffic Engineer.

The Engineering and Traffic Survey determined that the 85th percentile speeds on Hilltop Drive, between Palomar Street and Main Street are 36 and 37 mph. Per speed limit establishment protocol, this was measured during the off-peak hours under normal driving conditions, as required per the MUTCD.

Physical Conditions

Hilltop Drive between Palomar Street and Main Street is 5,769 feet (1.09 miles) long and 64' – 68' curb-to-curb wide. The street is classified as a Four Lane Major.

The following table describes the existing conditions along Hilltop Drive:

Segment Limits:	Hilltop Drive, between Palomar Street and Main Street.
Length/Width:	5,769 feet (1.09 miles)/64' – 68' curb to curb.
Classification:	Four Lane Major.
ADT (Year):	8,553 (2013, E. Rienstra Street – Orange Avenue).
Exist. Speed Limit:	Posted 30 mph on Hilltop Drive, between Palomar Street and E. Rienstra Street. Posted 35 mph on Hilltop Drive, between E. Rienstra Street and Main Street.

- 85th Speed:** 36 mph between Palomar Street and Orange Avenue and 37 mph between Orange Avenue and Main Street.
- Number of Lanes:** 4 total lanes (2 per direction) and left turn lane pockets.
- Striping:** 4 lanes, left-turn pockets, right-turn pocket, striped median, crosswalks and limit lines.
- Parking and Bike** Parking is allowed, but restricted along the entire frontage of Castle Park High School and along other areas within the segment. No Bike lanes are located along the entire segment.
- Land Use:** Mostly Residential.
- Horizontal Alignment:** A horizontal curve is located at the SDG& E easement (south of E. Rienstra Street) with a radius of 1000' over a length of 326' along the centerline with a design speed over 50 mph.
- Vertical Alignment:** A crest vertical curve is located at Holiday Court with a grade difference of 7.3% over 600' along the centerline produces a design speed of 33 mph.
- Accident Rate:** The accident rate at this segment is 0.88 (accidents per million vehicle miles) and is lower than the rate of 1.93 for similar roadways in the State of California (2010).
- Special Conditions:** Mixed commercial and residential use along the entire segment. Castle Park High School is located at 1395 Hilltop Drive with school "25 MPH Speed Limit When Children Present" warning signs. SDG&E Park is located on both sides of the roadway at 1450 Hilltop Drive. Both Bike and Bus routes exist along the segment.

CONCLUSION:

When speed limits are appropriately established (set at the 5 mph increment of speed in the upper half of the normal pace of traffic (85th percentile) the following objectives are achieved:

- Meaningful, unambiguous enforcement
- Voluntary public compliance
- Clear identification of the unreasonable violator
- Elimination of unjustifiable "tolerances" of higher speed travel

Based on the 85th percentile speed of the roadway, as well as low collision rate and other roadway characteristics outlined in the Engineering/Traffic Survey, staff has determined that the speed limit should be increased along Hilltop Drive, between Palomar Street and Main Street to 35 mph.

Should the City Council approve the increase in speed limit to 35 mph, Schedule X of the register maintained in the office of the City Engineer would be revised to show the following:

10.48.020 Schedule X – Established Speed Limits in Certain Zones – Designated

Name of Street: Hilltop Drive
Beginning At: Palomar Street
Ending At: Main Street
Proposed Speed Limit: 35 mph

FISCAL IMPACT:

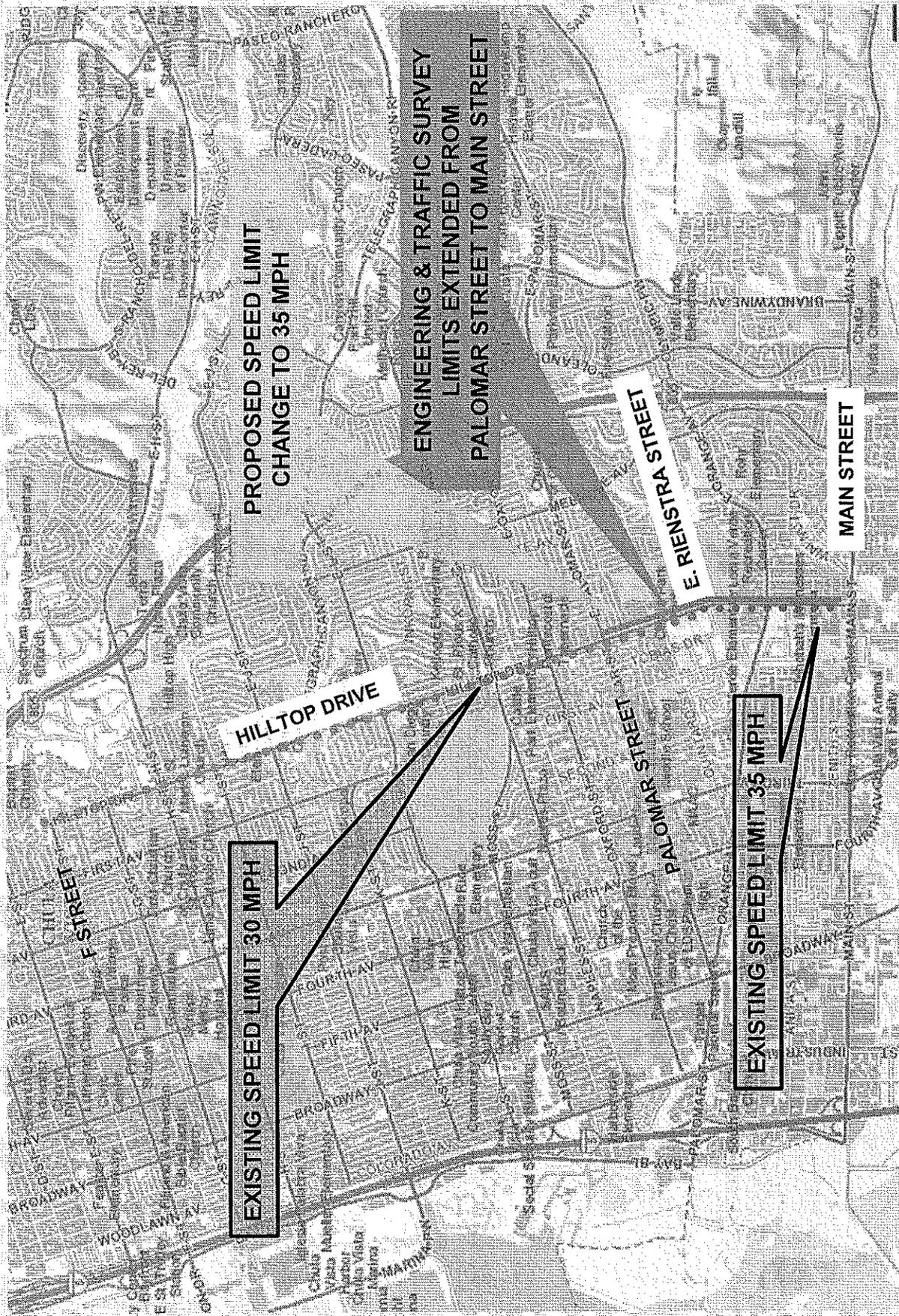
The establishment of the speed limit would require the posting of new speed limit signs and speed limit legends next to each new speed limit signs and advance warning signs with a 30 mph advisory speed limit. This work will be funded by an existing Traffic Engineering Capital Improvement Project, TF-332, Signing and Striping Program.

Attachments: Attachment 1- Speed Limits

Attachment 2- Speed Survey



Speed Limits



**PROPOSED SPEED LIMIT
CHANGE TO 35 MPH**

HILLTOP DRIVE

EXISTING SPEED LIMIT 30 MPH

EXISTING SPEED LIMIT 35 MPH

**ENGINEERING & TRAFFIC SURVEY
LIMITS EXTENDED FROM
PALOMAR STREET TO MAIN STREET**

E. RIENSTRA STREET

MAIN STREET

SPEED LIMIT - ENGINEERING/TRAFFIC SURVEY

STREET: Hilltop Drive
LIMITS: Palomar Street - Main Street
Length of Segment (ft): 5,769' (1.09 Miles)
Existing Posted Limit (mph): 30 mph (Palomar St - E Rienstra St)
35 mph (E Rienstra St - Main Street)

SUMMARY OF SPEED SURVEYS

	<u>Segment: Palomar Street - Orange Avenue</u>	<u>Orange Avenue - Main Street</u>
Date Taken:	<u>3/3/2014</u>	<u>3/3/2014</u>
No. of Vehicles on Sample (cars):	<u>100</u>	<u>100</u>
85th Percentile (mph):	<u>36</u>	<u>37</u>
Range of Speeds Recorded (mph):	<u>25 - 45</u>	<u>27 - 46</u>

ROADWAY CHARACTERISTICS

Width (ft): 64' - 68' curb to curb
Total No. of Lanes: 4 total lanes (2 lanes per direction)
Horizontal Alignment: A horizontal curve located at the SDG&E easement (south of E. Rienstra St.) with a radius of 1000' over a length of 326' along the centerline produces a design speed over 50 mph.
Vertical Alignment: A crest vertical curve located at Holiday Court with a grade difference of 7.3% over a length of 280' along the centerline produces a design speed of 33 mph.

TRAFFIC CHARACTERISTICS

Average Daily Traffic: 8,553 (2013, E Rienstra Street - Orange Avenue)
On-Street Parking: Restricted along the entire frontage of Castle Park High School, on both sides of the roadway 320' south of Quintard Street to the south limit of the SDG&E easement and at intersections where red curb exists.
Special Conditions: Mixed commercial and residential use along the entire segment. Castle Park High School is located at 1395 Hilltop Drive with "School Speed Limit 25 When Children Present" signs. SDG&E park is located on both sides of the roadway at 1450 Hilltop Drive. Both bike and bus routes exist along the segment.
Accident History: The accident rate at this segment is 0.88 (accidents per million vehicle miles) which is lower than the rate of 1.93 for similar roadways in the State of California (2010).

SURVEY RESULTS

Study was Prepared by: Erica Wood
Date: 03/25/2014
Recommendation: Increase the speed limit between Palomar Street and E. Rienstra Street to 35 mph due to the 85th percentile speed; retain the 35 mph speed limit between E. Rienstra Street and Main Street; and install advance warning signs and a 30 mph advisory speed limit on approaches to Holiday Court.

Date Recommendation Approved: _____
By: Muna Cuthbert, P.E.
Approved Speed Limit (mph): 35 mph
Per CVC 40802, Survey Expires: 03/03/2021

CITY OF CHULA VISTA - VEHICLE SPEED SURVEY

SEGMENT UNDER STUDY: Hilltop Drive (Orange Ave - Main St)

DATE: 3/3/2014

SURVEY SITE: South of Orange Ave

POSTED SPEED: 35 mph

TIME START: 10:50 AM

TIME END: 11:12 AM

WEATHER: Sunny

MPH	DIRECTION: <u> </u> NB = O <u> </u> SB = /																TOTAL	%	CUM %	
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80				
50																				
49																				
48																				
47																				
46	/																	1	1	100
45																		0	0	99
44	O	/																2	2	99
43	/																	1	1	97
42	O																	1	1	96
41	O	O																2	2	95
40	O	/	/															3	3	93
39	O	/																2	2	90
38	O	O	/															3	3	88
37	O	O	O	O	O	O	O	/	/	/	/	/	/	/	/	/	/	10	10	85
36	O	O	O	O	O	O	O	/	/	/	/	/	/	/	/	/	/	14	14	75
35	O	O	O	O	O	O	O	/	/	/	/	/	/	/	/	/	/	15	15	61
34	O	O	O	O	O	O	O	/	/	/	/	/	/	/	/	/	/	14	14	46
33	O	O	O	O	O	O	O	/	/	/	/	/	/	/	/	/	/	12	12	32
32	O	O	O	/	/	/	/	/	/									8	8	20
31	O	O	O	O	/	/	/											7	7	12
30	O	/	/															3	3	5
29	O																	1	1	2
28																		0	0	1
27	O																	1	1	1
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16																				
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14																				
13																				
RECORDER: Ben Herrera																	TOTAL NUMBER OF VEHICLES: 100			

CITY OF CHULA VISTA - VEHICLE SPEED SURVEY

SEGMENT UNDER STUDY: Hilltop Drive (Palomar St - Orange Ave)

DATE: 3/3/2014

SURVEY SITE: 1356 Hilltop Drive

POSTED SPEED: 35 mph

TIME START: 10:20 AM

TIME END: 10:47 AM

WEATHER: Sunny

MPH	DIRECTION: <u>NB</u> = 0 <u>SB</u> = /															TOTAL	%	CUM %	
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75				
50																			
49																			
48																			
47																			
46																			
45	O																1	1	100
44																	0	0	99
43																	0	0	99
42	O																1	1	99
41	/	/															2	2	98
40	O																1	1	96
39	O	/															2	2	95
38	O	O	/														3	3	93
37	O	O	O	/													4	4	90
36	O	O	/	/	/	/	/	/	/	/	/	/	/	/	/	/	9	9	86
35	O	O	O	O	O	/	/	/	/								9	9	77
34	O	O	O	O	O	O	O	/	/	/	/	/	/	/	/	/	11	11	68
33	O	O	O	O	O	O	O	O	/	/	/	/	/	/	/	/	16	16	57
32	O	O	O	O	O	/	/	/	/	/	/	/	/	/	/	/	14	14	41
31	O	O	O	O	/	/	/	/									8	8	27
30	O	O	O	O	O	/	/	/									8	8	19
29	O	O	/														3	3	11
28	/	/															2	2	8
27	O	/	/														3	3	6
26	O																1	1	3
25	O	/															2	2	2
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RECORDER: Ben Herrera															TOTAL NUMBER OF VEHICLES: 100				